

Eliza Furnace  
N side of PA 3045,  
.75 mile NW of PA 3047  
Vintondale Vicinity  
Cambria County  
Pennsylvania

HAER No. PA-257

HAER  
PA  
11-VINT.V,  
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD

HAER  
PA,  
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ELIZA FURNACE

HAER No. PA-257

Location: North side of PA 3045, .75 mile NW of PA 3047, near Black lick Creek between Raxis, Buffington Township, Indiana County and Vintondale, Black Lick Township, Cambria County, Pennsylvania (county line passes through the furnace stack.)

USGS Quad: Vintondale (1:24000)  
UTM: 17/676600/4483500

Date of Construction: 1846-47

Builders: David Ritter and George Rodgers (Ritter and Irwin Company)  
Thomas Devereaux, stone mason

Present Owner: Cambria County Historical Society

Present Use: Historic site

Significance: The Eliza Furnace is one of the best preserved remnants of the early iron industry in the region. It is an early example of a "hot blast" iron furnace, retaining the original cast-iron heat exchanger and corbelled stone work-arch.

Project Information: In February 1987, the Historic American Engineering Record (HAER) and the Historic American Buildings Survey (HABS) began a multi-year historical and architectural documentation project in southwestern Pennsylvania. Carried out in conjunction with America's Industrial Heritage Project (AIHP), HAER undertook a comprehensive inventory of Blair, Cambria, Indiana, Fayette and Westmoreland counties as the first step in identifying the region's surviving historic engineering works and industrial resources.

The results of this project have been published in Blair County and Cambria County, Pennsylvania: An Inventory of Historic Engineering and Industrial Sites (1990), edited by Gray Fitzsimons and produced by HABS/HAER for the National Park Service. Information on the Eliza Furnace may also be found in Indiana County, Pennsylvania: An Inventory of Historic Engineering and Industrial Sites (1993), edited by Ken Rose and produced by HABS/HAER for the National Park Service.

Compiler: Richard Quinn, Historian

History:

**DESCRIPTION:** The Eliza Iron Furnace is located on the Indiana-Cambria county line near Vintondale. The furnace is a pyramid-shaped structure, made of cut stone and approximately 30' high. The furnace has an interior opening, or bosh, of 9'. The bosh was loaded with iron ore, charcoal and limestone through an opening at the top of the furnace which was accessed via a wooden bridge connecting the furnace and the nearby hillside. This bridge no longer exists.

Eliza Furnace is an early example of a "hot blast" iron furnace. In both "cold-blast" and "hot blast" furnaces, a blast of air was forced into the furnace by a water-driven bellows. In this example, hot air was collected at the base of the furnace and carried to the coils or heat-exchanger on top by a vent pipe. This hot air was mixed with the cold air from the bellows and recirculated through the furnace. This method did not work very well. The coil pipes and vent pipes still remain.

The furnace, having been cleared of brush and debris, is in good condition. Although the bridge and cast house have long since been removed, the furnace possesses good integrity. Since the furnace is located at the forks of Blacklick Creek, it is conceivably threatened by high floodwaters.

**HISTORY:** The Eliza Furnace was constructed in 1845-46 at the forks of Blacklick Creek by David Ritter and George Rodgers. The spot was ideally suited for the manufacture of iron as all the necessary ingredients (iron ore, limestone, wood for charcoal, water power for the bellows) were nearby. The stack of cut stone was made by a local stone mason, Thomas Devereaux.

Early iron production was a labor-intensive industry. As many as ninety men may have been employed to work the furnace, cut and haul the wood, extract the limestone and iron ore, and haul the iron ingots to the Pennsylvania Canal. One iron furnace would quickly deplete a large forested area.

Eliza Furnace operated only until 1847, and its financial failure can be attributed to several factors. First, the ore was of poor quality, and in 1844 high-grade ore was discovered in the Mesabi Range in Minnesota. Also the Pennsylvania Railroad was constructed in the Conemaugh Valley rather than the Blacklick Valley, so costs of transporting the finished iron remained high. Then, in 1846, the government lowered tariffs on imported iron which meant that local production no longer had an advantage over foreign production. Advances in technology also made this type of iron production obsolete.

Eliza Furnace was most likely named for Eliza Ritter, who died in 1873 at the age of 57. Not including the bridge, cast house and bellows, little restoration and rehabilitation of the furnace stack proper would be necessary. The furnace was rated at 1,800 tons a year, but pig-iron production in 1848 was only 1,080 tons, or 35-40 tons per week, which at the time sold for about \$46 a ton. Production took place only during warm weather. Ninety men and boys were employed, and forty-five horses and mules were used in the operations.

As noted above, financial difficulties led to the failure of the furnace. Some folklore has been attached to the closure. Supposedly, as partner David Ritter's money ran out, he went to Philadelphia to try to obtain additional funds. While away, his wife ran away with his partner, George Rodgers. Ritter is said to have returned, discovered the fiasco, and hanged himself at the furnace. Another story tells that Ritter's six-year-old son fell into the furnace and was killed. In

this version, the older Ritter was so distraught that he hanged himself at the furnace. While these stories cannot be verified, they have made it into the published folklore of the neighborhood (see "Vintondale Furnace--Historical Iron Maker," in the *Nanty-Glo Journal*, 13 August 1953, Sec. II, 1), and locals claim that Ritter's ghost can be seen swaying at the furnace site on cold winter nights.

[This entry reprinted from Pennsylvania Historical & Museum Commission Historic Resource Survey Form Number 063-BF-06, Eliza Furnace, by Tracy E. Frampton and Jodie Molnar Hedrick, 22 March 1989.]

Sources:

Interview with local citizen.

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The Eliza Furnace at Vintondale on Twp. 3045 was built by Thomas Devereux in 1846 under the direction of its owner, the Ritter and Irwin Company. Typical of regional furnaces, Eliza is constructed of stone upon a stone foundation; no mortar was used to construct this pyramidally shaped structure. The Eliza Furnace only operated until 1848, but it remains in excellent condition. In 1907 its owner was the Vinton Colliery Company, but the furnace was soon bought by Western Warehouse Company, a subsidiary of the Pennsylvania Railroad. In 1963 it was acquired by the Cambria County Historical Society which maintains it for public viewing.

The Eliza Furnace is one of the best preserved remnants of the early iron industry in the region. The original cast-iron heat exchanger remains on top of the furnace. This device permitted the preheating of the air that was blown into the furnace. In addition, Eliza Furnace retains its corbelled stone work-arch.

Sources:

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